

IN THE CLAIMS:

Please amend claims 1-3, 7-10 and 18-38 as follows.

1. (Currently Amended) A method for limiting a signal in a transmitter at chip level, the method comprising:

determining a limiting signal from a transmissible signal filtered using a pulse shaping filter;_i

determining an error signal using the transmissible signal and the limiting signal;_i
and

generating a limited transmissible signal by reducing an error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal.

2. (Currently Amended) A method for limiting a signal in a transmitter at chip level, the method comprising:

determining a limiting signal from a transmissible signal filtered using a pulse shaping filter;_i

determining an error signal using the transmissible signal and the limiting signal;_i
orthogonalizing the error signal filtered using the filter matched to a chip pulse waveform;_i and

generating a limited transmissible signal by reducing the orthogonalized error signal from the transmissible signal.

3. (Currently Amended) A method for limiting a signal in a transmitter at chip level, the method comprising:

combining at least two signals modulated on different carriers to a combination signal;₁

determining a limiting signal from the combination signal filtered using a pulse shaping filter;₂

determining an error signal using the combination signal and the limiting signal;₃

dividing the error signal onto different carriers in a predetermined manner;₄ and

generating limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal.

4. (Original) A method as claimed in claim 1, wherein the transmissible signal is a baseband signal.

5. (Original) A method as claimed in claim 1, wherein the limiting signal is a baseband signal.

6. (Original) A method as claimed in claim 1, wherein the error signal is a baseband signal.

7. (Currently Amended) A method as claimed in claim 1, wherein the limiting signal is determined ~~by means of~~using a threshold value set for ~~the~~ power or amplitude values.

8. (Currently Amended) A method as claimed in claim 1, wherein the limiting signal is determined ~~by means of~~using a threshold value set for ~~the~~ power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for an error vector magnitude.

9. (Currently Amended) A method as claimed in claim 1, wherein the limiting signal is determined ~~by means of~~using a threshold value set for ~~the~~ power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for a peak code domain error.

10. (Currently Amended) A method as claimed in claim 1, wherein the limiting signal is determined ~~by means of~~using a threshold value set for ~~the~~ power or amplitude values, the threshold value being set so as to obtain the desired Peak-to-Mean Ratio, Peak-to-Average Ratio, Crest factor of the power or amplitude.

11. (Original) A method as claimed in claim 2, wherein a second clipping stage is added.

12. (Original) A method as claimed in claim 2, wherein orthogonalization is carried out by minimizing the equation

$$\left| \begin{bmatrix} x_1 & x_2 & \dots & x_p \end{bmatrix} \begin{bmatrix} c_{1,1} & c_{2,1} & \dots & c_{n,1} \\ c_{1,2} & c_{2,2} & \ddots & c_{n,2} \\ \vdots & \vdots & \ddots & \vdots \\ c_{1,p} & c_{2,p} & \dots & c_{n,p} \end{bmatrix} - \begin{bmatrix} y_1 & y_2 & \dots & y_n \end{bmatrix} \right|$$

13. (Original) A method as claimed in claim 2, wherein unused codes are utilized in orthogonalization.

14. (Original) A method as claimed in claim 2, wherein codes used at a lower modulation level are utilized in orthogonalization.

15. (Original) A method as claimed in claim 3, wherein the orthogonalization of the error signal is carried out according to carriers.

16. (Original) A method as claimed in claim 3, wherein the error signal is divided equally between different carriers.

17. (Original) A method as claimed in claim 3, wherein the error signal is divided between different carriers in relation to the power or amplitude values to be clipped.

18. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter comprising:

means for determining a limiting signal from a transmissible signal filtered using a pulse shaping filter;

means for determining an error signal using the transmissible signal and the limiting signal;

means for generating a limited transmissible signal by reducing the error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal;
and

means for filtering the limited transmissible signal using the pulse shaping filter.

19. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter comprising:

means for determining a first limiting signal from a transmissible signal filtered using a pulse shaping filter;

means for determining a first error signal using the transmissible signal and the first limiting signal;

means for orthogonalizing the first error signal filtered using the filter matched to a chip pulse waveform;

means for generating a first limited transmissible signal by reducing the orthogonalized first error signal from the transmissible signal;

means for determining a second limiting signal from the first limited transmissible signal filtered using the pulse shaping filter;

means for determining a second error signal using the first limited transmissible signal and the second limiting signal;

means for generating a second limited transmissible signal by reducing the second error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal; and

means for filtering the second limited transmissible signal using the pulse shaping filter.

20. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter comprising:

means for combining at least two signals modulated on different carriers to a combination signal;

means for determining a limiting signal from the combination signal filtered using a pulse shaping filter;

means for determining an error signal using the combination signal and the limiting signal;

means for dividing the error signal onto different carriers in a predetermined manner;

means for generating limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal;

means for filtering the limited transmissible signals using the pulse shaping filter;
and

means for generating a combined limited transmissible signal by combining the filtered limited transmissible signals.

21. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter comprising:

means for filtering transmissible signals modulated on different carriers using pulse shaping filters;

means for combining at least two filtered signals to a combination signal;

means for determining a limiting signal from the combination signal;

means for determining an error signal using the combination signal and the limiting signal;

means for dividing the error signal onto different carriers in a predetermined manner;

means for generating limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal;

means for filtering the limited transmissible signals using the pulse shaping filter;
and,

means for generating a combined limited transmissible signal by combining the filtered limited transmissible signals.

22. (Currently Amended) A transmitter as claimed in claim 1835, wherein the transmissible signal is a baseband signal.

23. (Currently Amended) A transmitter as claimed in claim 1835, wherein the limiting signal is a baseband signal.

24. (Currently Amended) A transmitter as claimed in claim 1835, wherein the error signal is a baseband signal.

25. (Currently Amended) A transmitter as claimed in claim 1835, the transmitter further comprising ~~means for determining~~configured to determine the limiting signal by ~~means of~~using a threshold value set for the power or amplitude values.

26. (Currently Amended) A transmitter as claimed in claim 1835, the transmitter further comprising ~~means for determining~~configured to determine the limiting signal by ~~means of~~using a threshold value set for the power or amplitude values, the threshold

value being set bearing in mind the maximum value predetermined for an error vector magnitude.

27. (Currently Amended) A transmitter as claimed in claim 1835, the transmitter further configured to determine ~~comprising means for determining~~ the limiting signal is ~~determined by means of~~fusing a threshold value set for the power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for a peak code domain error.

28. (Currently Amended) A transmitter as claimed in claim 1835, the transmitter further configured to determine ~~comprising means for determining~~ the limiting signal by ~~means of~~fusing a threshold value set for the power or amplitude values, the threshold value being set so as to obtain the desired Peak-to-Mean Ratio, Peak-to-Average Ratio, Crest factor of the power or amplitude.

29. (Currently Amended) A transmitter as claimed in claim 1936, wherein the orthogonalization of the first error signal is carried out according to carriers.

30. (Currently Amended) A transmitter as claimed in claim 2037, the transmitter further configured to divide ~~comprising means for dividing~~ the error signal equally between different carriers.

31. (Currently Amended) A transmitter as claimed in claim 2037, the transmitter further configured to divide ~~comprising means for dividing~~ the error signal between different carriers in relation to the power or amplitude values to be clipped.

32. (Currently Amended) A transmitter as claimed in claim 1936, the transmitter further ~~comprising means for carrying~~ configured to carry out orthogonalization by minimizing the equation

$$\left| \begin{bmatrix} x_1 & x_2 & \dots & x_p \end{bmatrix} \begin{bmatrix} c_{1,1} & c_{2,1} & \dots & c_{n,1} \\ c_{1,2} & c_{2,2} & \ddots & c_{n,2} \\ \vdots & \vdots & \ddots & \vdots \\ c_{1,p} & c_{2,p} & \dots & c_{n,p} \end{bmatrix} - \begin{bmatrix} y_1 & y_2 & \dots & y_n \end{bmatrix} \right|.$$

33. (Currently Amended) A transmitter as claimed in claim 1936, the transmitter further ~~comprising means for carrying~~ configured to carry out orthogonalization utilizing unused codes.

34. (Currently Amended) A transmitter as claimed in claim 1936, the transmitter further comprising means for carrying out orthogonalization utilizing codes used at a lower modulation level.

35. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter being configured to:

determine a limiting signal from a transmissible signal filtered using a pulse shaping filter,

determine an error signal using the transmissible signal and the limiting signal,

generate a limited transmissible signal by reducing the error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal, and

filter the limited transmissible signal using the pulse shaping filter.

36. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter being configured to:

determine a first limiting signal from a transmissible signal filtered using a pulse shaping filter,

determine a first error signal using the transmissible signal and the first limiting signal,

orthogonalize the first error signal filtered using the filter matched to a chip pulse waveform,

generate a first limited transmissible signal by reducing the orthogonalized first error signal from the transmissible signal,

determine a second limiting signal from the first limited transmissible signal filtered using the pulse shaping filter,

determine a second error signal using the first limited transmissible signal and the second limiting signal,

generate a second limited transmissible signal by reducing the second error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal, and

filter the second limited transmissible signal using the pulse shaping filter.

37. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter being configured to:

combine at least two signals modulated on different carriers to a combination signal,

determine a limiting signal from the combination signal filtered using a pulse shaping filter,

determine an error signal using the combination signal and the limiting signal,

divide the error signal onto different carriers in a predetermined manner,

generate limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal,

filter the limited transmissible signals using the pulse shaping filter, and

generate a combined limited transmissible signal by combining the filtered limited transmissible signals.

38. (Currently Amended) A transmitter limiting a signal at chip level, the transmitter being configured to:

filter transmissible signals modulated on different carriers using pulse shaping filters,

combine at least two filtered signals to a combination signal,

determine a limiting signal from the combination signal,

determine an error signal using the combination signal and the limiting signal,

divide the error signal onto different carriers in a predetermined manner,

generate limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal,

filter the limited transmissible signals using the pulse shaping filter, and

generate a combined limited transmissible signal by combining the filtered limited transmissible signals.